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December 5, 2000

TO: [redacted]

THRU: Daron R. Haddock, Permit Supervisor

FROM: Peter H. Hess, Sr. Reclamation Specialist

RE: Midterm Permit Review, Alternate Sediment Control Areas, Sunnyside Cogeneration Associates, Sunnyside Refuse/Slurry, C[redacted]MT00-1

SUMMARY:

On August 22, 2000 representatives from the Utah Division of Oil, Gas and Mining conducted a field visit to the Sunnyside Cogeneration Associates facility located in Sunnyside, Utah to obtain information relative to four items which were chosen as part of the review process for the midterm permit review and renewal. Item 3 was relative to the use of "best technology currently available" (BTCA) practices at the site.

An initial deficiency review was generated by the UDNR/OGM on September 17, 2000. On October 26, 2000, Sunnyside Cogeneration Associates, and its engineering consultant responded to the deficiencies. A copy of same was received in the Price Field Office on November 6, 2000.

This technical memo will address the permittee's response to the requirements of the R645 coal rules as they relate to BTCA areas at Sunnyside Cogeneration Associates.

The site currently has three areas which implement "best technology currently available" practices. These are:

1) The area north and west of the clear water pond (adjacent to slurry cells #1 & #2).

2) The reclaimed area directly South of the East and West slurry cells known as the "old coarse refuse haul road." This area was reclaimed in 1995; reestablished vegetation and silt fences in strategic locations currently provide sediment control.

3) The third and final BTCA area lies NE of the coarse refuse toe pond, on the east side of the Carbon County Railway line, but on the South side of the drainage to which the seep at the base of the coarse refuse pile (monitoring point known as "CRS") reports. Sediment control in this area is provided by berms, vegetation, catch basins in series, and a silt fence at the flow discharge point (directly to an essentially undisturbed drainage).

TECHNICAL ANALYSIS:

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Other Treatment Facilities

The permittee's response to the deficiencies aired on September 26 includes a revised Chapter 7 Hydrology text covering BTCA areas.

BTCA Area #1

Regulation R645-301-728.310 found on page 700-12 of Chapter 7 discusses BTCA area #1, which as previously noted, is adjacent to the Clear Water Pond and Slurry Cells #1 and #2. As noted, approximately 0.48 cfs flows across the 200 foot permit boundary during the 10 year, 24 hour storm event. The SEDIMOT demonstration included with the text indicates that approximately 1.0453 tons will report to the permit boundary. As previously noted in the Division's 9/26/2000 document, the off permit vegetation is identical in both density and diversity to the permit area. The flat terrain here also assists in the settling out of material prior to the effluent entering any drainage.

Section 742 found on page 700-19 of the revised text discusses the various types of sediment control which have been implemented at Sunnyside Cogeneration Associates including the various diversion ditches, sediment impoundments and BTCA areas.

The main text relative to ASCA's begins on page 700-20 under **-742.230 thru -742.240 Other Treatment Facilities.** SHEET NUMBER 7-20 shows design details for the numerous types of sediment control methods which are being implemented at the facility. These include silt fences, surface roughening and benching, straw bale check dams, rock check dams, sediment traps, berms, and water bars. Same is P.E. certified by Mr. Scott Carlson.

The permittee's October 26, 2000 response includes revised Sheets Numbered 7-1A, 1B, 1C, 1D, and 7-1E.

BTCA area #1, (ASCA area north and west of the Clear Water Pond and Slurry Cells #1 and #2) is depicted on Sheet Number 7-1E. Flow path arrows indicating the direction the sheet flow takes toward the alternate sediment control method implemented here (a straw bale dike) are depicted. As indicated previously, a demonstration has been provided for the 10 year, 24 hour design event, indicating that 1.0453 tons of sediment will report from a 200 foot length of permit boundary during the design event, (see Results of BTCA Area #1 discussion).

Technically, the requirements of R645-301-742.231 appear to have been met. However, there are concerns which exist that make the information provided by the SEDIMOT demonstration unclear. These are:

1) As the area incorporated in BTCA area #1 is very nearly flat, it is unclear to which 200 foot length of permit boundary the sediment laden runoff is to report.

2) Sheet 7-1E depicts the straw bale dike as 100 feet in length.

Two questions arise here: 1) Is the straw dike 100 feet long? If so, a 100 foot width of sheet flow at least appears to be able to report from the area, untreated, (or at best, treated by the vegetation in the area). 2) What 200 foot length of the perimeter does this flow traverse? The total sediment yield (as indicated in the "SUMMARY TABLE FOR TOTAL WATERSHED" in the SEDIMOT analysis for BTCA Area #1) is indicated to be 1.0453 tons. The text of the BTCA Area #1 analysis indicates that 0.063 cubic feet of sediment reports from the area per linear foot of permit boundary, or 12.6 cubic feet of sediment per event.

Based on Technical Directive 003, Table 1-Permitting Standards, no numeric demonstration is needed in the permitting process to determine if "best technology currently available" practices will be effective in the field. That determination has been left to the UDNR/OGM reclamation specialist making the field inspection of the BTCA area..

BTCA Area #2

Sheet numbers 7-1A and & 7-1C specifically delineate the area of the watershed (old coarse refuse haul road reclaimed area) which is implementing BTCA methods as treatment. Alternate sediment control locations are depicted, as are flow paths. A down gradient flow path

is depicted. The drawing is P.E. certified and the erosion control design meets the requirements of 731.720 and 301-512. Field conditions, however, do not correspond with plan depiction.

A note on Sheet Number 7-1A indicates "APPROXIMATE LOCATION ALTERNATE SEDIMENT CONTROLS (SEE PHOTOS)". One photo has been incorporated on Sheet Number 7-1A, immediately above the title block. Although the intent here is appreciated, the silt fence locations are very difficult to ascertain, unless one knows where they are. If one compares the photo to the plan view drawing, it is obvious that the silt fences which can be determined on the photo are not depicted on the plan view drawing. The vegetation on this reclaimed slope has developed quite well since the reclamation of this area to the point that it is doubtful if a silt fence at the toe of the reclaimed slope would have much effect. A UDNR/OGM field inspection of the area will determine if BTCA methods have been successfully implemented here.

BTCA Area #3

BTCA area #3 lies at the NNW toe of the coarse refuse pile, directly east of the abandoned Carbon County Railway track, and south of the drainage to which flow from the coarse refuse seep reports. Design calculations for the 36-inch culvert which carries both disturbed (this BTCA) and undisturbed flow from the watershed north of the drainage can be found in the Sunnyside Cogeneration and Associates mining and reclamation plan. This design is P.E. certified.

The newly submitted Sheet Number 7-1B shows the area; same is now cross hatched and accurately delineates the area. This is now consistent with the other two BTCA's depicted on Sheet Numbers 7-1A, 7-1C, and 7-1E. Map 7-1B contains a note "APPROXIMATE LOCATION (ASC), and accurately depicts the location of the ASC (which based on field knowledge is an in place silt fence). This ASC is depicted as approximately 67 feet long. The permittee has also implemented at least one dugout pond (where four are depicted on Sheet Number 7-1B). Flow paths have been indicated on the P.E. certified drawing. The term "dugout pond" was developed through conversation with the assigned Reclamation Specialist at this site.

As part of the BTCA #3 analysis, the permittee has included as Appendix 7-7 three SEDIMOT II demonstrations. These are for different events, but the design event (10 year 24 hour), reports a total sediment yield of 1.1516 tons.

Based on Technical Directive 003, Table 1-Permitting Standards, no numeric demonstration is needed in the permitting process to determine if "best technology currently available" practices will be effective in the field. That determination has been left to the UDNR/OGM reclamation specialist making the field inspection of the BTCA area..

It needs to be noted here, that based on this reviewer's experience with Federal inspectors during OSM oversights, it is imperative that drawings of approved alternate sediment control areas are identical to the field conditions which exist for same. Sediment controls which are

depicted on a P.E. approved BTCA area drawing **must match the conditions in the field relative to the type of sediment control utilized and the location of same.** Notices of violation have been issued when drawings and field conditions did not concur.

Findings:

R645-301-742.231, problems exist with BTCA area drawings #1, #2, and #3 as current field conditions do not match what is shown in the MRP, (i.e., silt fence locations, silt fence lengths, the number of "dugout ponds," etc.). This fact voids the P.E. certification of sheet numbers 7-1A and 7-1C.

Three areas which have been reported as BTCA areas have had sediment load analyses performed. This is adequate.

RECOMMENDATION:

It is recommended that the plan view drawings of the three BTCA areas be revised to:

1) Accurately reflect field conditions relative to the length of, the location of, and the type and number of sediment control devices implemented.
2) Accurately reflect which 200 foot length of perimeter (BTCA #1) length is being crossed by the 10 year, 24 hour flow, as referred to in the analysis.

When the drawings accurately reflect field conditions, a recommendation for approval can be made.

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